

Claims:

1. A collapsible metal air fuel cell, comprising:

a unit cell including:

a pair of metal frames;

5 a rubber housing adhered to left, right and lower sides of the metal frames;

a separator and an air cathode adhered to an outer side of the metal frame; and

10 a plate like metal fuel electrode inserted into the interior of the metal frames.

2. The cell of claim 1, wherein said separator is polypropylene non-woven fabric.

15 3. The cell of claim 1, wherein said air cathode has one surface coated with a porous hydrophobic layer, and another surface coated with an activated carbon powder.

4. The cell of claim 1, wherein said metal air fuel electrode is a metal
20 composed of aluminum and magnesium.

5. The cell of claim 1, wherein said metal frame has bent portions in the four sides of a rectangular metal frame, wherein the inner side of the same is formed in a window lattice shape.

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6. The cell of claim 1, wherein said metal frame has bent portions in the four sides of a rectangular metal frame, wherein the inner side of the same is formed with punched holes.

10 7. The cell of either claim 5 or 6, wherein said metal frame has angular corners of the bent portions cut away at 45° and are not overlapped when the bent portions of the metal frame are folded, and the bent portions are draw-formed by a depth of 0.8~1.2mm.

15 8. The cell of claim 1, wherein said rubber housing includes a pair of rubber tubes in the lower sides of the left and right sides.

9. A method for fabricating a collapsible metal air fuel cell, comprising the steps of:

20 the first step for curing at 150~290°C for 40~210 seconds and forming a

rubber housing in a metal frame;

the second step for adhering a separator to an outer side of the metal frame;

the third step for adhering an air cathode to an upper side of the
5 separator; and

the fourth step for folding bent portions of the metal frame using a press machine.

10. The method of claim 9, wherein when compressing the bent portions of
10 the metal frame of the fourth step using a press machine, a metal insertion material is inserted into the interior of the cell.

11. The cell of claim 1, wherein when a plurality of unit cells are connected
in series, an air diffusion plate is inserted between the unit cells, and a rubber
15 band is adhered to the left and right sides of the cell.

12. The cell of claim 11, further comprising a water container having a rubber tube connector.

20 13. The cell of claim 12, wherein said water container includes a salt bag

formed of a porous non-woven fabric and having an electrolyte salt.

14. The cell of claim 12, wherein said air diffusion plate has the porosity of 90% with 10~40ppi.

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15. The cell of claim 12, wherein said rubber tube connector is connected with a rubber tube formed in a rubber housing in a zigzag pattern, so that electrolyte is consecutively filled.